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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/697,308	10/31/2003	Liann-Be Chang	MR3029-31/DIV	9879

7590 03/10/2006
ROSENBERG, KLEIN & LEE
SUITE 101
3458 ELLICOTT CENTER DRIVE
ELLICOTT CITY, MD 21043

EXAMINER

TRAN, THANH Y

ART UNIT	PAPER NUMBER
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2822

DATE MAILED: 03/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/697,308

Applicant(s)

CHANG ET AL.

Examiner

Thanh Y. Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 2/16/06.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 17 and 19-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 17 and 19-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Receipt is acknowledged of the "conditional" request for a Continued Prosecution Application (CPA) filed on 02/16/06 under 37 CFR 1.53(d) based on prior Application No. 10/697,308. Any "conditional" request for a CPA submitted as a separate paper is treated as an unconditional request for a CPA. Accordingly, the request for a CPA application is acceptable and a CPA has been established. An action on the CPA follows.

Claim Objections

1. Claims 19-21 are objected to because of the following informalities:

Claim 19 is objected because it recites the limitation "said liquid phase epitaxy" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claims 20-21 are objected because they recite the limitation "the liquid phase epitaxy" in line 3. There is insufficient antecedent basis for this limitation in the claims.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 17-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Kimura et al (U.S. 5,739,552).

As to claim 17, Kimura et al discloses in figure 5b a structure of a LED device comprising: a LED substrate (20) having a GaP layer (10) thereon; and a liquid phase epitaxy

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grown ("LPE") a transparent layer ["(Zn-doped) GaP layer" 11] having Zn dopants therein on the GaP layer (10) of the LED substrate (20), wherein the transparent layer (11) is composed of a semiconductor compound (semiconductor compound comprises GaP material having Zn doped therein) different to that of the GaP layer (GaP layer only comprises GaP material) (see col. 11, lines 54-67).

Applicant should note that: GaP is known as a transparent material (see col. 1, lines 60-61 in cited reference of Akaike et al (U.S. 6,528,823)).

As to claim 19, the limitation of "said liquid phase epitaxy utilizes a supersaturated solution comprising metallic antimony (Sb) and indium (In) as a solvent" is a process limitation in a product claim, which product does not otherwise patentably distinguish over prior art, cannot impart patentability to the product. In re Stephens 145 USPQ 656 (CCPA 1965).

As to claim 20, the limitation of "*said Zn dopant is in an amount of 1/1000 to 1/10 by weight of a solvent of a supersaturated solution in the liquid phase epitaxy*" is a process limitation in a product claim, which product does not otherwise patentably distinguish over prior art, cannot impart patentability to the product. In re Stephens 145 USPQ 656 (CCPA 1965). Further, *the amount of 1/1000 to 1/10 of Zn dopant* would have been obvious to an ordinary artisan practicing the invention because, absent evidence of disclosure of criticality for the range giving unexpected results, it is not inventive to discover optimal or workable ranges by routine experimentation. In re Aller, 220 F.2d 454, 105 USPQ 233, 235 (CCPA 1955). Furthermore, the specification contains no disclosure of either the critical nature of the claimed dimensions of any unexpected results arising therefrom. Where patentability is aid to be based upon particular chosen dimensions or upon another variable recited in a claim, the Applicant must show that the

chosen dimensions are critical. See *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

As to claim 21, the limitation of “*Zn dopant is in an amount 1/1000 to 1/10 by weight of Sb of the supersaturated solution in the liquid phase epitaxy*” is a process limitation in a product claim, which product does not otherwise patentably distinguish over prior art, cannot impart patentability to the product. *In re Stephens* 145 USPQ 656 (CCPA 1965). Further, *the amount of 1/1000 to 1/10 of Zn dopant* would have been obvious to an ordinary artisan practicing the invention because, absent evidence of disclosure of criticality for the range giving unexpected results, it is not inventive to discover optimal or workable ranges by routine experimentation. *In re Aller*, 220 F.2d 454, 105 USPQ 233, 235 (CCPA 1955). Furthermore, the specification contains no disclosure of either the critical nature of the claimed dimensions of any unexpected results arising therefrom. Where patentability is aid to be based upon particular chosen dimensions or upon another variable recited in a claim, the Applicant must show that the chosen dimensions are critical. See *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

As to claim 22, Kimura et al discloses in figure 5b a structure of a LED device comprising: a LED substrate (20) having a GaP layer (10) thereon; a non-GaP transparent layer [“(Zn-doped) GaP layer” 11] having Zn dopants therein on the GaP layer (10) (see col. 11, lines 54-67).

Applicant should note that: GaP is known as a transparent material (see col. 1, lines 60-61 in cited reference of Akaike et al (U.S. 6,528,823)). And the limitation of “*said GaP layer formed by liquid phase epitaxy process using a supersaturated solution*” is a process limitation in

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a product claim, which product does not otherwise patentably distinguish over prior art, cannot impart patentability to the product. In re Stephens 145 USPQ 656 (CCPA 1965).

As to claim 23, Kimura et al discloses in figure 5b a structure of a LED device wherein the non-transparent layer (11) is formed by Liquid Phase Epitaxy process (see col. 11, lines 54-67). Further, the limitation of “*said non-GaP transparent layer is formed by liquid phase epitaxy process utilizing a supersaturated solution comprising metallic antimony (Sb) and indium (In) as a solvent*” is a process limitation in a product claim, which product does not otherwise patentably distinguish over prior art, cannot impart patentability to the product. In re Stephens 145 USPQ 656 (CCPA 1965).

As to claim 24, the limitation of “*Zn dopant is in an amount 1/1000 to 1/10 by weight of a solvent of a supersaturated solution in the liquid phase epitaxy process*” is a process limitation in a product claim, which product does not otherwise patentably distinguish over prior art, cannot impart patentability to the product. In re Stephens 145 USPQ 656 (CCPA 1965).

As to claim 25, the limitation of “*Zn dopant is in an amount of 1/1000 to 1/10 by weight of Sb of the supersaturated solution in the liquid phase epitaxy process*” is a process limitation in a product claim, which product does not otherwise patentably distinguish over prior art, cannot impart patentability to the product. In re Stephens 145 USPQ 656 (CCPA 1965).

Response to Arguments

4. Applicant's arguments with respect to claims 17, 19, 20, 21, 22, 23, 24, and 25 have been considered but are moot in view of the new ground(s) of rejection.

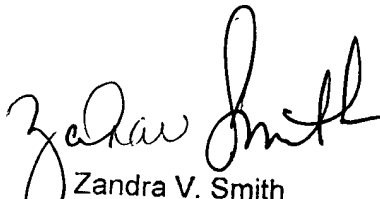
Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh Y. Tran whose telephone number is (571) 272-2110. The examiner can normally be reached on M-F (9-6:30pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zandra Smith can be reached on (571) 272-2429. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TYT


Zandra V. Smith
Supervisory Patent Examiner
2 March 2016